

## ABSTRACT OF THE DISCLOSURE

A method, device and software for ensuring path diversity across a communications network are disclosed. The method forms a digest of  
5 resources used in an initial, working, path is created as the initial path is established. This digest may be used during the formation of a subsequent, protection, path. Each node along the subsequent path can use the digest to ensure that resources are not common to the initial and subsequent paths. Conveniently, the digest may take the form of a Bloom filter that summarizes  
10 local information about resources known to each node along the initial path. The method lends itself for use in an MPLS compliant network or any connection oriented network such as an ATM, SONET or switched optical network.